DOCUMENT RESUME

CG 003 713

ED 028 460

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Behavioral-Reinforcement Counseling with Rural High School Youth.

Oklahoma Univ., Norman.
Pub Date 68
Note-12p.
EDRS Price MF-$0.25 HC-$0.70
Descriptors-*Behavioral Counseling, Behavioral Objectives, Behavior Development, Guidance Functions, Guidance Objectives, High School Students, *Information Seeking, Occupational Information, *Rural Youth

Based on the premises that a major aim of guidance is to help students make wise vocational and educational decisions, and that learning to collect and use relevant information is helpful in making such decisions, this study compares several behavioral reinforcement techniques for effectiveness in increasing information seeking behavior (ISB) by rural high school students. The subjects were 288 11th grade students in six rural Wisconsin high schools, who were assigned to five treatment groups or a control situation. After an initial level of ISB was determined by questionnaire, students met with a counselor in either dyadic or group meetings. Statements of ISB were reinforced verbally by the counselor. In one other group situation, they saw a film demonstrating ISB, then met with the counselor. After treatment, frequency and variety of ISB were reported after three weeks on a questionnaire. Significant differences were found through analysis of variance between experimental and control groups, but no significant differences were found between experimental treatments. Females showed more, and more varied ISB than did males. (BP)

ED028460

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BEHAVIORAL-REINFORCEMENT COUNSELING WITH RURAL HIGH SCHOOL YOUTH

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For a long time now, counselors have heard that one of the most important purposes of guidance and counseling is to help students in making "good" educational and vocational decisions. According to several writers (Havighurst and Neugarten, 1962; Berdie, 1966), information and encouragement provided by the high school counselor can be the single most crucial factor in influencing capable students to continue in post high school education. Wrenn (1962) has suggested:

> Primary emphasis in counseling with students should be placed on the developmental needs and decision points in the lives of the total range of students rather than upon the remedial needs and crisis points in the lives of a few students, with the major goal of counseling being that of increased maturity in decision-making upon the part of the student.

Recent studies have demonstrated that reinforcement and social modeling-reinforcement counseling procedures are effective when used to help students learn to collect and utilize relevant information before making important decisions (Hosford, 1966; Thoresen, Krumboltz and Varenhorst, 1965; Krumboltz and Schroeder, 1965; Krumboltz and Thoresen, 1964). These studies have demonstrated that behavioral counseling procedures are effective with male and female students in dyadic and small group situations. However, the subjects utilized in those studies were enrolled in high schools located in large urban communities. It is not known whether the same counseling procedures would promote similar behaviors on the part of students enrolled in schools located in small rural communities.

This study was a replication and extension of some of the behavioral counseling studies completed by Krumboltz and his associates at Stanford University.

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Three significant changes were made in research methodology:

1. The subjects were enrolled in six rural high schools located in five different Wisconsin counties found by Schroeder (1963), to be representative of rural Wisconsin. The Stanford research was conducted in schools located in large urban communities.

2. Base lines of information-seeking behaviors (ISB) for each 11th-grade student and school were determined prior to initiation of the study.

3. Counselors employed in the actual school settings were trained to administer research treatments, rather than "specially trained counselors" not employed by the schools in which the research was conducted.

The study was designed to investigate methods of increasing the information-seeking behavior (ISB) of students living in rural communities, interested in counseling relevant to their educational and vocational futures. The basic problem was to determine which, if any, behavioral counseling techniques, when applied in individual or small group settings, would best promote ISB on the part of the student subjects.

Methodology

This study was conducted in six high schools located in five rural Wisconsin counties representative of rural Wisconsin. They were selected for participation on the basis of similar pre-study overall base rates of ISB, for male and female students. In each school all 11th-grade students were asked to indicate possible interest in discussing post high school plans with their counselor. More than 85 per cent of the 11th-grade students in each school indicated such counseling interest.

In six schools, 24 boys and 24 girls were randomly selected from those students indicating counseling interest. Three schools participated in the administration of behavioral-reinforcement counseling techniques; the other three were used for control-comparison purposes. In the experiemental schools, four boys and four girls were randomly assigned to each of five counseling treatment groups,

coupled with an additional four boys and four girls randomly assigned to a no-treatment control group (n = 48 per school). Total N involved in the six schools was 288. (See Table I.)

Treatment Descriptions

The five active treatments employed in this research were:

1. Reinforcement Treatment--Dyadic

This procedure involved the use of positive verbal reinforcement by the counselor for a particular student behavior; references made in the interview regarding possible ISB. Reinforcement was defined as an attempt by the counselor to reward, verbally and non-verbally, the student in a pleasant, positive and favorable manner. During the interview the counselor systematically offered the verbal reinforcement to the student for verbal statements related to the desired information-seeking behavior. For example, if a student said he might discuss his vocational plans with his father, his statement might have been followed with an immediate positive verbal reinforcement from the counselor: "Excellent! That's a good idea."

Dyadic reinforcement counseling treatments were administered in two separate hour-long interviews, spaced one week apart, in which the counselor and student explored possible alternative post high school plans. The first interview centered around possible alternatives open to the student; the counselor terminated the interview by asking the student to offer a brief summary of the things he might do to gather information relevant to his vocational objectives. The student's summary offered the counselor an excellent opportunity to reinforce the student for each tentative ISB response offered.

The second reinforcement interview was very similar to the first; the counselor consciously gave systematic positive verbal reinforcement to the student after the student had made tentative verbal ISB responses or reported ISB already completed.

2. Reinforcement Treatment--Group

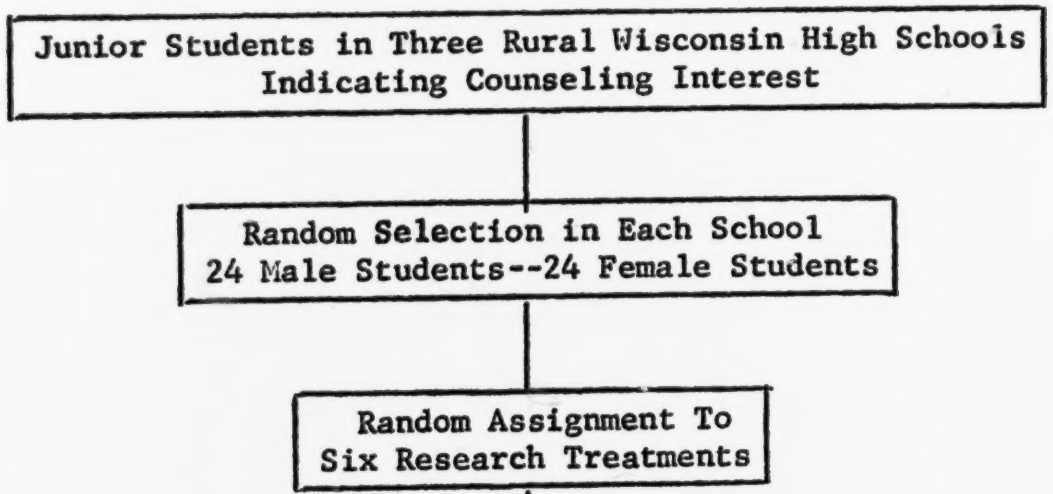
The group reinforcement counseling treatment was virtually identical to the above except that the counselor worked with a small group of either four boys or four girls. He indicated to the students that they often had similar problems about vocational decisions, and that they were gathered to suggest to each other possible alternatives regarding their vocational or educational futures. Throughout the interview, the counselor reinforced students after they made verbal reference to information-seeking responses.

3. Model-reinforcement Treatment--Dyadic

This experimental treatment was very similar to the reinforcement-dyadic treatment, except for the presentation of two tape-recorded student social models who verbally demonstrated the desired behaviors which this investigation sought to

TABLE I

EXPERIMENTAL DESIGN


Junior Students in Three Rural Wisconsin High Schools
Indicating Counseling Interest
Random Selection in Each School
24 Male Students--24 Female Students
Random Assignment To
Six Research Treatments

Treatment	I	II	III	IV	V	VI
Sex	MRG	MRI	RCG	RCI	FRG	NTC
Male	1 group/school (n=4) N=12	4s/school N=12	1 group/school (n=4) N=12	4s/school N=12	1 group/school (n=4) N=12	4s/school N=12
Female	1 group/school (n=4) N=12	4s/school N=12	1 group/school (n=4) N=12	4s/school N=12	1 group/school (n=4) N=12	4s/school N=12
Total	N=24	N=24	N=24	N=24	N=24	N=24

Treatments: (I) Model-Reinforcement Counseling Group, (II) Model-Reinforcement Counseling Individual, (III) Reinforcement Counseling Group, (IV) Reinforcement Counseling Individual, (V) Filmstrip-Reinforcement Group, (VI) No-Treatment Control. Experimental n = 144; Control Comparison n = 144; Total N = 288.

promote. The tape-recorded student social models were prepared in accordance with principles explained in recent research describing the effectiveness of social modeling processes in facilitating certain kinds of learning (Bandura and Walters, 1963). The theoretical bases for the procedures used to develop the audio-tapes used in this treatment were derived from modeling principles offered by Hosford (1966).

After beginning the counseling session with a brief explanation of why the student had been called to the counselor's office, the counselor then introduced the 15-minute social model tape. The tape focused on the discussion of the high school plans between a male counselor and a student model (same sex as student listener), which exhibited the desired kinds of exploratory ISB. A male counselor was used on all tape-recorded models because prior research (Thoresen, Krumboltz and Varenhorst, 1965) has indicated similar tapes using male counselors were most effective in promoting ISB for both male and female students.

4. Model-reinforcement Treatment--Group

Group model-reinforcement procedures were virtually identical to those used in dyadic settings except for slight alterations in introductory and summarizing practices. In each small group model-reinforcement interview, the counselor worked with four students of the same sex.

It was hypothesized that students listening to model tapes would identify with the student tape model and then proceed to imitate the behavior of the student model. This premise was based on prior evidence (e.g., Bandura, 1965), indicating that observers who view others being reinforced for a particular behavior were predisposed to copy that behavior.

5. Filmstrip-reinforcement counseling treatment--Group

This treatment was similar to the model-reinforcement treatment, except a 15-minute filmstrip was substituted for the social model tape-recording. The filmstrip was a two part 30-minute color-sound filmstrip, professionally produced by Guidance Associates, specifically designed to encourage students to explore possible avenues of post high school education. Birnbaum (1968), using a similar filmstrip coupled with 15-minute dyadic interviews, stressed the importance of personal counseling in conjunction with the use of filmstrips directed toward helping students make adequate educational and vocational plans.

The 15-minute filmstrip was followed by a 45-minute group discussion interview. During this period the counselor systematically reinforced and encouraged references made by students regarding possible post-interview ISB. This treatment was administered in group settings only, for two reasons: (1) to counterbalance "Hawthorne effects" which might arise in small rural schools after showing a filmstrip to individual students, and (2) the additional time required for the counselor to administer the filmstrip-reinforcement treatment to four male and four female students in dyadic settings.

Control Procedures

The 24 students randomly assigned to the treatment control groups (four boys and girls in each of three experimental schools) received no special counseling treatment. They were allowed to participate in the regular on-going guidance services of their respective schools. Three weeks after the completion of all experimental counseling interviews, all 11th-grade students were asked to complete a follow-up questionnaire designed to measure participation in ISB. The control students served as a basis for comparison of treatment effects within each experimental school.

In each of three control-comparison schools, 24 male and 24 female students were randomly assigned to control groups to be used for comparison purposes. The ISB scores computed for no-treatment control groups within experimental schools were compared to similar ISB scores for control-comparison school control groups, thus securing additional data to control for possible "Hawthorne effects."

Operational Definition of Criterion Variables

The dependent variables in this study were those of frequency and variety of ISB displayed by students during the three post-treatment weeks following the second week of final counseling interviews. Information-seeking behavior (ISB) was defined by Schroeder (1964) as:

> Those behaviors or acts which the student performs in order to gain relevant information, ideas, or experience regarding his conceptual framework relating to decision-making, or in exploration concerning educational and vocational plans, e.g., reading pamphlets about schools or vocations, discussing financial costs of college with parents, talking to peers about the possibility of attending college, etc.

The strength of the dependent variables was defined as the quantity and variety of ISB displayed by the students during the three-week post-treatment period. Dimensions of the criterion variables were:

A. The total number of information-seeking behaviors completed outside the counseling interviews (called <u>frequency</u> of ISB).

B. The total number of different types of information-seeking behaviors completed outside the counseling interviews (called <u>variety</u> of ISB).

Three weeks after the counseling interviews had been completed, <u>all</u> 11th-grade students in the six schools completed a questionnaire, part of which asked questions relative to the students' attempts to seek relevant career information. Each

student received two scores; one for frequency of ISB and one for variety of ISB. The frequency of such behaviors was found by counting the number of ISB's listed by the student on the questionnaire. The variety score was found by counting the number of different types of ISB. For example, talking to a parent, a counselor and a brother about going to college would constitute one variety of ISB (talking to someone), but the frequency of that ISB would be three (talked to three people).

Results

A 3 x 2 x 6 analysis of variance (fixed effects model) was computed for testing the main and interactive effects of counselor-school, sex of student and counseling treatment as independent variables on the two dependent variables: frequency and variety of ISB. The results of that anova are summarized in Table II.

TABLE II

ANALYSIS OF VARIANCE FOR FREQUENCY AND VARIETY OF INFORMATION-SEEKING BEHAVIOR

Source of Variation	df	Frequency MS	F	Variety MS	F
A School	2	53.08	4.08*	7.13	1.81
B Sex	1	164.69	12.61**	50.17	12.76**
C Treatment	5	155.81	11.93**	60.70	18.44**
AB	2	28.77	2.20	5.67	1.44
AC	10	8.65	.66	1.70	.43
BC	5	7.14	.54	2.60	.66
ABC	10	4.87	.37	3.08	.78
Within groups	108	13.06		3.93	
Total	143	18.81			

* = p is greater than .05
** = p is greater than .01

Main effects for student sex and counseling treatment were significant at the .01 level of significance for both criterion variables. The main effect of counselor-

school reached the .05 level of significance for frequency of ISB. Data reported in Table II indicated no significant first or second order interaction effects.

The hypotheses framed for investigation in this study were:

1. All behavioral-reinforcement treatments would promote more ISB than no-treatment control procedures.

2. No significant differences in frequency and variety of ISB would occur between similar treatments offered in small group and dyadic settings.

3. Model-reinforcement treatments would promote more ISB than reinforcement treatments and reinforcement treatments would promote more ISB than filmstrip-reinforcement treatments.

Because the analysis of variance indicated significance for the main effects, t ratios were computed between treatments for each school and sex. Table III offers a representative example of those calculations; a complete report of the analyses is available elsewhere (Meyer, 1968). The results of the comparisons presented in Table III are in summary form due to space requirements.

Statistical analysis of the data resulted in the following conclusions using dependent variables of frequency and variety of ISB:

1. Students exposed to behavioral-reinforcement counseling techniques did participate in significantly more frequency and variety of ISB than students exposed to no-treatment control procedures.

2. Students exposed to group counseling procedures participated in as many ISB's as those students receiving similar counseling treatment in dyadic counseling interviews.

3. On the average, no significant differences were found in the behavioral reinforcement counseling techniques, i.e., reinforcement counseling procedures were as effective as model-reinforcement and filmstrip-reinforcement for promoting the criterion behavior.

4. For most experimental counseling treatments, female students participated in a greater frequency and variety of ISB than did male students receiving similar counseling treatment in the same school.

TABLE III

TREATMENT COMPARISONS FOR FREQUENCY AND VARIETY OF INFORMATION-SEEKING BEHAVIOR

Male Treatment	Comparison	Frequency t	Variety t
Model-Reinforcement - Group	1-2	-.28	-.16
Model-Reinforcement - Individual	1-3	.24	.17
Reinforcement - Group	1-4	.11	.12
Reinforcement - Individual	1-5	1.20	1.39
Filmstrip-Reinforcement	2-3	.80	.42
	2-4	.42	.27
	2-5	1.90	1.66
	3-4	-.07	.00
	3-5	1.59	1.49
	4-5	1.04	1.11
	1/2 - 3/4	.55	.38

Female Treatment	Comparison	Frequency t	Variety t
Model-Reinforcement - Group	1-2	-.87	-.10
Model-Reinforcement - Individual	1-3	-.51	-.12
Reinforcement - Group	1-4	-.51	.25
Reinforcement - Individual	1-5	-.38	-.12
Filmstrip-Reinforcement - Group	2-3	.29	.00
	2-4	.37	.44
	2-5	.59	.00
	3-4	.05	.53
	3-5	.23	.00
	4-5	.19	-.51
	1/2 - 3/4	.08	.21

Discussion

The findings of this research investigation clearly indicated that behavioral counseling techniques derived from social learning theory can be used successfully by counselors in schools located in rural Wisconsin communities to change the information-seeking behaviors of 11th-grade students. Based on the value assumption that counselors should help students learn the processes involved in personal and vocational-educational decision-making, this finding has considerable relevance,

especially for counselors in rural settings.

This study demonstrated, through the use of specific counseling techniques and objective criteria, that small group counseling procedures were as effective as dyadic counseling interviews in promoting ISB among 11th-grade students.

The results of this study offer the following implications for counselors in high schools located in rural Wisconsin communities:

1. Counselors can structure the counseling interview in terms of specific student problems, i.e., concern about post high school plans, and can use behavioral counseling techniques to induce post-interview behavioral change.

2. Counselors probably should not rely on merely providing students with large amounts of occupational-vocational literature. Such practices may not help students learn the decision-making processes, even though the student might make an "acceptable" vocational-educational decision. Helping students to learn <u>how</u> to make use of such information and <u>how</u> to apply the information gained to the decision-making processes should be included in the services offered by the high school counselors.

3. The counselor can cause significant change in the ISB's of students by using behavioral-reinforcement counseling techniques with a very limited number of counseling interviews. The research finding that group and individual treatments cause equal amounts of ISB for male and female students, is a strong encouragement toward the adoption of small group counseling procedures regarding the goal of helping 11th-grade students learn the process of how to make better decisions about their educational and vocational futures.

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